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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/518,440 | 07/01/2005 | Jens Muller | GRUNP43 | 7852 |
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| 49691 | 7590 | 01/25/2008 |
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IP STRATEGIES
12 1/2 WALL STREET
SUITE I
ASHEVILLE, NC 28801

EXAMINER

RHEE, JANE J

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

01/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/518,440

Applicant(s)

MULLER ET AL.

Examiner

Jane Rhee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>11/26/07</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "PWM" is indefinite and not defined in the specification.
2. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Its unclear if applicant is claiming either the battery or the capacitor, or if the applicant is claiming both the battery and the capacitor. Please state by using language like "further comprising".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,3,4,5,11-12, are rejected under 35 U.S.C. 102(b) as being anticipated by Thomas et al. (5916699).

As to claim 1, Thomas et al. discloses a hybrid energy source, comprising a fuel cell device and an energy storing device, which are directly interconnected in parallel (figure 1 number 12 and 14).

As to claim 3, Thomas et al. discloses wherein the energy storing device comprises a battery, which is connected to the fuel cell device in a homopolar arrangement (figure 1 number 12 and 14, col. 2 lines 45-59).

As to claim 4, Thomas et al. discloses wherein at least one of the homopolar connections between the fuel cell device and the battery has two branches, wherein the first branch is provided for the charging of the battery by the fuel cell device and has a charge limiter to limit the charging (figure 1 number 24), and the second branch is connected to an output terminal and contains a device to prevent charging of the battery via the second branch (figure 1 number 26 has a switch 28 that prevents charging).

As to claims 5,11-12, Thomas et al. discloses a device to prevent an electrolysis current through the fuel cell device (figure 1 number 22).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. in view of Sugiura et al. (20030118876).

Thomas et al. discloses the hybrid energy source described above. Thomas et al. fail to disclose wherein the energy storing device comprises a capacitor and comprises a battery.

Sugiura et al. teaches a capacitor in addition to the battery and the fuel cell for the purpose of providing large amount of electric power in a short amount of time.

Therefore it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Thomas et al. with a capacitor as the energy storing device along with the battery in order to provide a large amount of electric power in a short amount of time (figure 1, paragraph 0051).

As to claim 10, Thomas et al. discloses a device to prevent an electrolysis current through the fuel cell device (figure 1 number 22).

5. Claims 6,13,14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al.

Thomas et al. discloses the hybrid energy source described above. Thomas et al. fail to disclose wherein the source voltage of the battery in the fully charged state differs by less than 10% from the source voltage of the fuel cell device.

It would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, the source voltage of the battery in the fully charged state that differs by less than 10% from the source voltage of the fuel cell device in order to provide optimal value in absence of unexpected results. Thomas et

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al. teaches an energy source that is capable of providing sufficient power for the high power pulses required of certain devices, therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, the die source voltage of the battery in the fully charged state that differs by less than 10% from the source voltage of the fuel cell device in order to meet the required power pulses of certain devices.

6. Claims 7-8,15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. in view of Leach (6590370).

Thomas et al. discloses the hybrid energy described above. Thomas et al. fail to disclose a voltage regulator, which converts the terminal voltage of the hybrid energy source into a desired output voltage and wherein the voltage regulator comprises a PWM voltage regulator.

Leach teaches a voltage regulator, which converts the terminal voltage of the hybrid energy source into a desired output voltage and wherein the voltage regulator comprises a PWM voltage regulator in order to achieve the desired fuel cell voltage control (col. 4 lines 35-54).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Thomas et al. with a voltage regulator, which converts the terminal voltage of the hybrid energy source into a desired output voltage and wherein the voltage regulator comprises a PWM voltage

regulator in order to achieve the desired fuel cell voltage control (col. 4 lines 35-54) as taught by Leach.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane Rhee whose telephone number is 571-272-1499. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jane Rhee
January 18, 2008